

Farm Pesticide Storage Facility

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Factsheet

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(replaces OMAFRA Factsheet *Farm Pesticide Storage Facility*, Order No. 07-059)

This Factsheet describes key regulatory requirements and best management practices to consider when planning and constructing a pesticide storage facility for the farm.

Pesticide products are very useful tools in agricultural production. Used correctly, they contribute to higher productivity and higher quality characteristics in crops. Pesticides — herbicides, insecticides, fungicides, rodenticides, miticides, nematocides — include biological and chemical products used to prevent, control or destroy pests such as insects, weeds or diseases.

Pesticide use may pose risks to humans, livestock, wildlife and the environment. Understanding the risks associated with storage of pesticides and managing these risks in a proactive, environmentally sustainable way provides safe working conditions and protects the environment.

CLASSIFICATION OF PESTICIDES IN ONTARIO

A pesticide product must be registered by Health Canada's Pest Management Regulatory Agency and classified by the Ontario Ministry of the Environment (MOE) to be sold and used in Ontario.

The MOE regulates the sale, use, transportation, storage and disposal of federally registered pesticides in Ontario. Pesticides are classified based on toxicity, persistence in the environment and other factors. Detailed information on this process and other legislated requirements can be found under the Pesticides tab on the MOE website: www.ene.gov.on.ca/environment.

Any farmer can purchase and use Class 5, 6 and 7 products. Uncertified farmers who present a Farm Business Registration Number or a signed Farmer Self Declaration form to a General Vendor can purchase Class 4 products for use on the agricultural operations they own or manage. Certified farmers can purchase Class 2 and 3 products for use on the agricultural

operations they own or manage, in addition to Class 4, 5, 6 and 7 products.

PESTICIDE STORAGE SAFETY

It is important to minimize the amount of pesticides stored on the farm. Purchase only what is needed for one growing season. Ensure that all pesticides are stored properly and safely. Under the *Pesticides Act, 1990*, and O. Reg. 63/09, it is illegal to store pesticides under unsafe conditions.

PESTICIDE CONTAINERS AND LABELS

Store all pesticides in their original containers or, if the original container is damaged, in a secondary container that is made of similar material with a legible label. The label must clearly indicate the name of the pesticide, the concentration of each pesticide active ingredient and the pest control product (PCP) registration number assigned to it under the federal *Pest Control Products Act, 2006*, or the *Fertilizers Act, 1985*.

REGULATORY STORAGE REQUIREMENTS

The area where pesticides are stored must be maintained in good repair and kept in a clean and orderly condition.

All classified pesticides must be stored so that:

- They will not impair the health or safety of any person.
- They will not have any contact with food or drink intended for human or animal consumption.
- They will not contaminate the natural environment or any other pesticides stored in the same area.
- Emergency telephone numbers, including the fire department, hospital and poison control centre (Ontario Poison Centre) are prominently displayed near the area where the pesticides are stored. Other important numbers include ambulance, physician, police and the MOE Spills Action Centre (1-800-268-6060). Although not specified in O. Reg. 63/09, it is also a good idea to post these important emergency numbers at the telephone closest to the storage area.

Ministry of Agriculture,
Food and Rural Affairs



- A warning sign is prominently displayed near the area and at all entrances to where the pesticides are stored. Details about signage are discussed below.

CLASS 2 AND 3 PESTICIDES — ADDITIONAL REGULATORY STORAGE REQUIREMENTS

Ventilation

If Class 2 or 3 pesticide products are stored indoors, ventilate the compartment, room or structure where the pesticide is stored to the outside atmosphere. Use either a passive or forced air mechanical ventilation system to exhaust fumes from the storage area.

Personal protective equipment

Where Class 2 or 3 pesticide products are stored, provide adequate respiratory protection and protective clothing for emergency purposes. According to O. Reg. 63/09, adequate protective clothing includes rubber or neoprene boots, rubber or neoprene gloves, hats, coats and other garments that effectively protect the user from adverse effects that might result from a pesticide coming in contact with the skin during or after the handling or use of a pesticide. The pesticide product label and Material Safety Data Sheets (MSDS) are a good source of information regarding specific personal protective equipment.

To ensure that respiratory protection and protective clothing is readily available for use in an emergency, store them nearby but not inside the storage area (e.g., in an adjacent room or structure); this also protects the equipment from becoming contaminated in a spill or other emergency.

Floor drains

If Class 2 or 3 pesticide products are stored, there cannot be any floor drains in the storage area that lead to a storm sewer, sanitary sewer or watercourse.

Secured access

The door leading to the storage area must be locked to control access and prevent unauthorized entry.

Segregation — Class 2 pesticides

Class 2 pesticide products have additional storage requirements — they must be stored in an area that is used primarily for the storage of pesticides. Establishing a clearly defined portion of a pesticide storage area, such as a separate shelf or segregated location within the storage area, or an identified portion of a shelf or compartment is a recommended practice when Class 2 products are involved.

SIGNAGE

All pesticide storage areas must have a warning sign prominently displayed near the area and at all entrances bearing, in clearly visible, block letters, the words:

- WARNING IN CASE OF FIRE USE EXTREME CAUTION
- AUTHORIZED PERSONS ONLY and
- PESTICIDE STORAGE or CHEMICAL STORAGE

More specific information on the warning sign (text, colour, version date) is found at MOE's website: www.ene.gov.on.ca/environment/en/resources/STDPDPROD_079997.

Chemical storage warning signs are available from the Workplace Safety and Prevention Services (previously known as the Farm Safety Association) at www.wsps.ca or 1-877-494-9777.

PESTICIDE STORAGE STRUCTURES

A separate, free-standing building is the best type of storage area. Farmers can purchase prefabricated pesticide storage or modular units (Figure 1) or construct a separate structure that is used exclusively for the storage of pesticides.

The requirements under O. Reg. 63/09 can be incorporated into these units, which are available in various sizes, up to approximately 9.3 m² (100 ft²) in floor area.

A pesticide storage area can be constructed within another building if appropriate fire separation is provided. The fire separation requirement is explained later in this Factsheet.

Site location

Selecting a site for a pesticide storage that is both practical and safe for people and the environment requires the consideration of a number of factors, including human safety, potential for surface water and groundwater contamination, livestock feeds, wildlife habitat, access, soil conditions and potential for future expansion.

Detailed information relating to each of the site selection factors is found in the OMAFRA publication, BMP 13, *Pesticide Storage, Handling and Application*.

Key considerations:

- Locate the building on dry, stable surfaces where flooding will not occur.

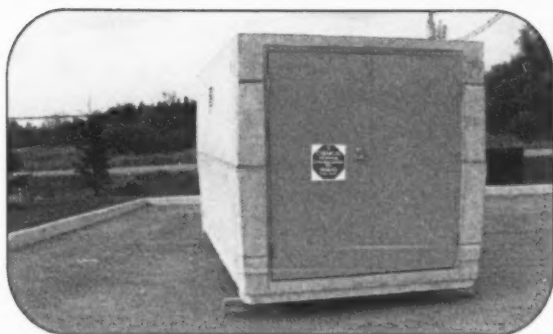


Figure 1. A prefabricated pesticide storage.
(Photo courtesy of Brooklin Concrete Inc.)

- Grade the facility around the perimeter so that roof drainage flows freely away from the building.
- Locate the building so that water contamination is unlikely, e.g., on a slope of surrounding land, at a minimum separation distance of 60 m (200 ft) from dwellings and 90 m (300 ft) from surface water and wells.
- Locate a mixing area adjacent to the storage that is designed to contain any spilled material, preventing contamination of surface and/or groundwater supplies.

To protect from fires, separate pesticide storages from other farm buildings by a minimum of 30 m (100 ft) or by using a fire separation, such as exterior walls, with a minimum fire-resistance rating of 1 hour.

REGULATORY BUILDING REQUIREMENTS

Farmers choosing to construct their own pesticide storage structure must also ensure that they satisfy the requirements of the Building Code (O. Reg. 350/06) made under the *Building Code Act, 1992*.

For information on constructing a farm building in Ontario, see the OMAFRA Factsheet, *Constructing a Farm Building in Ontario*, Order No. 07-007.

The National Farm Building Code of Canada, 1995, covers structural sufficiency, fire safety and health requirements for the protection of persons in farm buildings. The Code includes a number of requirements related to pesticide storage.

The additional requirements of the National Farm Building Code of Canada include:

- The ventilation to the outdoors for the storage facility shall be sufficient to prevent the accumulation of toxic or flammable vapours.

- The storage facility shall be accessible from the outdoors only.
- The floor for the storage facility shall be made of concrete or other impervious material without a floor drain and curbed around the full perimeter to provide containment for the largest container in the storage, but not less than 50 mm (2 in.).
- A storage facility within another building must be separated from all other occupancies by a fire separation with a minimum 1-hr fire-resistance rating.
- Any chemicals requiring protection from freezing must be stored in an insulated and heated cabinet.

Plan drawings and construction details for a 2,440 mm x 3,650 mm (8 ft x 12 ft) wood frame, steel-clad storage structure, which incorporates the regulatory requirements, are found in OMAFRA publication BMP 13, *Pesticide Storage, Handling, and Application*.

Before construction begins, contact the Chief Building Official in your municipality regarding any additional Building Code or siting requirements that may apply.

BEST MANAGEMENT PRACTICES FOR A PESTICIDE STORAGE FACILITY

The following best management practices are examples of structural and other related features that can be incorporated into a pesticide storage facility to address regulatory requirements and provide additional integrity and effectiveness for the storage area.

Volatile product storage Store insecticides, herbicides, rodenticides and fungicides apart from each other in the facility. Store volatile products in a tightly sealed container or in a separate area.

Clean-up materials Ensure that enough absorbent material (such as kitty litter or soil) is available to clean up any spills or leaks from containers.

Floor Seal the concrete floor with an approved concrete-sealer product.

Roof Reduce heat build-up with light-coloured roofing.

Passive (i.e., natural) ventilation For unheated or non-insulated storages, provide at least 0.55 m² (6 ft²) of total inlet and exhaust area per 9.3 m² (100 ft²) of building floor area.

Mechanical ventilation For heated and insulated storages, the goal is to exchange one-quarter to half of the air in the building per minute. For a storage area having a floor area of 9.3 m² (100 ft²), a 20–25 cm (8–10 in.) diameter exhaust fan normally does the job.

Install a switching system so that the fan can be turned on manually prior to entry and use a timer to turn on the fan periodically, to allow stale air to be removed.

Protection from freezing Include an insulated cabinet equipped with low-wattage electric bulbs and a thermostat to provide winter storage for chemicals susceptible to freezing. The stored items must not come in contact with the bulbs.

Anteroom Include an anteroom with a separate outside entrance to provide a clean non-contaminated area for storage of safety equipment and clothing that is completely sealed off from the storage section and ventilates separately through the soffits.

Hydrant Locate a frost-free water hydrant outside the storage facility. Install a backflow valve/siphon preventer (self-draining type) on the discharge end of the hydrant.

Ramp Form a concrete ramp (broom finish) with a finished elevation equal to the top of the curb to facilitate loading and unloading with a front-end loader.

Fire extinguisher Locate an ABC-type fire extinguisher in close proximity to, but not in, the pesticide storage facility.

More details on these and other best management practices can be found in OMAFRA publication BMP 13, *Pesticide Storage, Handling, and Application*.

CONCLUSION

Establishing a pesticide storage facility that meets all the regulatory requirements for safety and environmental protection requires careful planning. A properly planned and constructed facility is functional, efficient, and minimizes the risks to humans, livestock, wildlife and the environment.

RESOURCES

OMAFRA Factsheet, *Pesticide Contamination of Farm Water Supplies, Recommendations on Avoidance, Clean-up and Responsibilities*, Order No. 10-097.

OMAFRA Factsheet, *Constructing a Farm Building in Ontario*, Order No. 07-007.

OMAFRA Publication 837, *Reducing the Risk of Fire on Your Farm*.

BMP 13, *Pesticide Storage, Handling, and Application*.

Grower Pesticide Safety Course Manual, Section 14, *How to Store Pesticides Safely*, University of Guelph, Ridgetown Campus (www.opecp.ca).

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The information contained in this Factsheet is not authoritative. It is derived from the *Pesticides Act*, O. Reg. 63/09, O. Reg. 350/06 and the National Farm Building Code of Canada (1995) and is for informational purposes only. Efforts have been made to make it as accurate as possible, but in the event of a conflict, inconsistency or error, the requirements set out in the referenced legislation take precedence. Please consult the act and regulations at www.e-laws.gov.on.ca for the specific legal details, and consult your lawyer if you have questions about your legal obligations.

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